

UNIVERSITI TEKNOLOGI MARA

**TECHNOLOGY TRANSFER (TT):
LEVEL OF ABSORPTIVE CAPACITY AND
TECHNOLOGICAL CAPABILITIES IN MEGA
CONSTRUCTION PROJECTS**



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ABSTRACT

The concept of 'technology transfer' or TT projects emerges as an important business and managerial concern for many developing countries. TT in construction is seen as an effective mechanism to increase the flow of technological development by acquiring newer technology from abroad in response to a changing economic environment. The concept of TT in construction organisations could occur simultaneously, involving the flow of imported technology (i.e., knowledge, skills and tools) via construction projects. Thus, the aim of this research is to develop a conceptual framework of TT, level of absorptive capacity and technological capabilities in mega construction projects to enhance implementation of TT in Malaysian construction organisations. The empirical research was undertaken by means of an Initial Preliminary Survey among five people (academicians and practitioners) that were involved in TT research and projects, followed by Case Studies-Phase 1 (interviews and document sources) among the six (6) Category G7 Companies with experience in TT projects. In total 35 valid responses were received constituting a response rate of 48.6 %. The results were analysed using NVivo software version 8. In order to underpin the Case Studies-Phase 1, Case Studies-Phase 2 was conducted using semi-structured interviews with Human Resource Officers of the respective construction companies. The purpose is to measure the level of absorptive capacity and technological capabilities in TT projects. The findings from the research were used to develop a conceptual framework for TT, level of absorptive capacity and technological capabilities in the Malaysian construction industry. The framework was validated by using a validation questionnaire survey. The findings revealed that the seven components of TT are: types of technology (i.e., knowledge, skills and tools); projects; organisations (i.e., public and private sectors); the level of absorptive capacity; the level of technological capabilities, benefits and barriers of TT projects. The results of the research could provide an insight into the Malaysian construction project organisations and will provide valuable guidelines, in particular to public or private sectors in Malaysia that are looking forward to participating in the global construction market.

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